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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,888	09/12/2003	Mohamad El-Batal	LSI.81US01 (03-1078)	6950

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EXAMINER

CHERY, MARDOCHEE

ART UNIT PAPER NUMBER

2188

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/660,888	EL-BATAL ET AL.	
	Examiner	Art Unit	
	Mardochee Chery	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Applicant's communication filed on January 31, 2006, in response to PTO Office Action mailed on November 1, 2005. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.
2. In response to the last Office Action, no claims have been amended, added or canceled. As a result, claims 1-24 remain pending.

Response to Arguments

3. Applicant's arguments filed January 31, 2006 have been fully considered but they are not persuasive.
4. Applicant argues on page 4, paragraph 2 of the remarks that "Independent claims 1, 9 and 17 recite the feature that the delta log is started when one of the storage units is taken off line".

However, none of independent claims 1, 9 or 17 recite this feature. As such, Applicant is arguing features which are not claimed and in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the delta log is started when one of the storage units is taken off line) are not recited in the rejected claim(s).

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Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

5. Applicant argues on page 5, paragraph 3 and page 6, paragraph 3 of the remarks that “the Burns reference teaches away from the Rezaul Islam reference in that Burns requires that A1 remain linked while the user modifies A2, A1 being available for the DBMS queries. Rezaul Islam by contrast requires that the system has means for identifying a failed storage device and for removing the failed storage device from the RAID system”.

Examiner strongly disagrees with Applicant’s approach of Rezaul Islam’s reference teaching away from Burns’. First, Examiner notices that Applicant just recites different portions of Rezaul Islam’s and Burns’ references to allege the fact that one teaches away from another without any showing or detail of how he arrives at such conclusion. Examiner would like to mention that a prior art reference must be considered in its entirety, i.e., as a whole and the prior art disclosure of more than one alternative does not constitute a teaching away because such disclosure does not criticize, discredit, or otherwise discourage the claimed method for recovering data in a redundant data storage system. In re Fulton 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146.

Examiner would like to further emphasize that the fact that “Burns requires that A1 remain linked while the user modifies A2, A1 being available for the

DBMS queries and Rezaul Islam requires that the system has means for identifying a failed storage device and for removing the failed storage device from the RAID system" has no bearing whatsoever on the notion of a reference teaching Burns' teaching away from Rezaul Islam's. Applicant's mere allegation of Burns' teaching away from Rezaul Islam is not sufficient ground to show that the references are nonanalogous. See MPEP § 2145.

Since Rezaul Islam's and Burns' are in the same filed of endeavor (i.e. data backup, storage and recovery system) as Applicant's invention and are pertinent to the particular problem with which Applicant's was concerned (i.e. data recovery in a storage system), the references can be relied upon as a basis for rejection of the claimed invention and should not be construed as teaching away from one another. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

6. Applicant argues on page 6, paragraph 1 of the remarks that "the examiner has failed to make a proper prima facie argument of obviousness as is required in a rejection under 35 USC 103(a)".

Examiner would like to point out that the 103 (a) rejection of Rezaul Islam in view of Burns, met the three criteria to establish a prima facie case of obviousness. Applicant's mere allegation that a proper prima facie case of obviousness was not made

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is not sufficient since Applicant failed to show how if at all one of the criteria of a prima facie of obviousness was not met.

7. Applicant argues on page 6, paragraph 2 of the remarks, that "Burns teaches away from Rezaul Islam leading to the conclusion that the Examiner has improperly combined Burns with Rezaul Islam".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references was given on pages 2-3 of the Office Action mailed on November 1, 2005.

8. In view of the above discussion, the 103 (a) rejection of claims 1-24 is maintained and reiterated below for Applicant's convenience.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 6-12, 14-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rezaul (6,282,670) in view of Burns (6,088,694).

As per claim 1, Rezaul discloses a method for recovering data in a redundant data storage system having a plurality of data storage units, said method comprising: storing said data on said plurality of data storage units according to a redundant data storage method [col.2, lines 18-29]; removing one of said plurality of data storage units [col.4, lines 33-42]; while said one of said plurality of data storage units is removed, changing a portion of said data on the remainder of said plurality of data storage units and [col.4, lines 36-43]; replacing said one of said plurality of data storage units [col.1, line 66 to col.2, line 6]; and updating said one of said plurality of data storage units [col.2, lines 18-27].

However, Rezaul does not specifically teach storing a record of said changes in a delta file and updating those portions of data recorded in said delta file as required by the claim.

Burns discloses storing a record of changes in a delta file and updating portions of data recorded in the delta file [col.5, line 61 to col.6, line 5] in order to achieve efficient and cost effective backup of data (col.6, lines 3-5).

Since the technology for implementing a storage recovery system with storing a record of changes in a delta file and updating portions of data recorded in the delta file was well known as evidenced by Burns, an artisan would have been motivated to implement this feature in the system of Rezaul in order to achieve efficient and cost effective backup of data. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to modify the system of Rezaul to include storing a record of changes in a delta file and updating portions of data recorded in the delta file because this would have achieved efficient and cost effective backup of data (col.6, lines 3-5) as taught by Burns.

As per claims 9 and 17, the rationale in the rejection of claim 1 is herein incorporated. Rezaul further discloses a redundant data storage system capable of fast restoration of serviced data storage units comprising: a plurality of data storage units [col.4, lines 33-44]; and a controller that stores data on said plurality of data storage units according to a redundant data storage method, changes a portion of said data after taking one of said plurality of said data storage units off line, stores a record of the changes in a delta log that are made to the remainder of the plurality of said data storage units, brings said one of said plurality of said data storage units online, and

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updates said one of said plurality of said data storage units by updating those portions of data recorded in said delta file [Fig.1, controller 120; col.17, lines 46-60].

As per claims 2, 10 and 18, Rezaul discloses the redundant data storage method comprises RAID 1 [col.1, line 66 to col.2, line 15].

As per claims 3, 11 and 19, Rezaul discloses redundant data storage method comprises RAID 3 [col.2, lines 43-57].

As per claims 4, 12 and 20, Rezaul discloses redundant data storage method comprises RAID 5 [col.3, lines 30-45].

As per claims 6, 14 and 22, Rezaul discloses the one of said data storage units comprises a plurality of disk drives [Fig.1].

As per claims 7, 15 and 23, Burns discloses delta file comprises pointers to said portion of said data that is changed Fig.6].

As per claims 8, 16 and 24, Burns discloses the delta file comprises an updated version of the portion of the data that is changed [Fig.8].

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11. Claims 5, 13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rezaul (6,282,670) in view of Burns (6,088,694) as applied to claims 1, 9, and 17 respectively, and further in view of McCabe (2002/0016827).

As per claims 5, 13 and 21, McCabe discloses the redundant data storage method comprises remotely mirroring the data [Fig.3; par.20] in order to provide better fault tolerance and/or disaster recovery (par.2).

Since the technology for implementing a storage recovery system with remote mirroring was well known as evidenced by McCabe, an artisan would have been motivated to implement this feature in the system of Rezaul and Burns in order to provide better fault tolerance and/or disaster recovery. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to modify the system of Rezaul and Burns to include remote mirroring because this would have provided better fault tolerance and/or disaster recovery (par.2) as taught by McCabe.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lu	6,952,794
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Gold et al.	6,785,786
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14. When responding to the office action, Applicant is advised to clearly point out the patentable novelty that he or she thinks the claims present in view of the state of the art disclosed by references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111(c).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mardochee Chery whose telephone number is (571) 272-4246. The examiner can normally be reached on 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manonama Padmanabhan can be reached on (571) 272-4210. The fax

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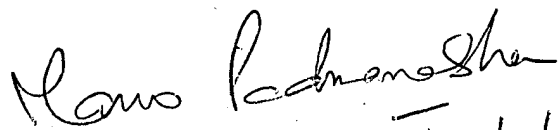
phone number for the organization where this application or proceeding is assigned is 703-872-9306.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 7, 2006



Mardochee Chery
Examiner
AU2188


4/14/06

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER